

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:)	Mail Stop Appeal Brief - Patents
)	
Steven R. WILLIS et al.)	Group Art Unit: 2419
)	
Application No.: 10/665,349)	Examiner: R. Wilson
)	
Filed: September 22, 2003)	
)	
For: BUNDLING ATM AND POS DATA)	
IN A SINGLE OPTICAL CHANNEL)	

APPEAL BRIEF

U.S. Patent and Trademark Office
Customer Window, Mail Stop Appeal Brief - Patents
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This Appeal Brief is submitted in response to the final Office Action, dated October 27, 2008, and in support of the Notice of Appeal, filed January 15, 2009.

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Juniper Networks, Inc.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellants are unaware of any related appeals, interferences, or judicial proceedings.

III. STATUS OF CLAIMS

Claims 46-69 are pending in this application. Claims 1-45 were previously canceled without prejudice or disclaimer.

Claims 46-69 were rejected in the final Office Action, dated October 27, 2008, and are the subject of the present appeal. These claims are reproduced in the Claim Appendix of this Appeal Brief.

IV. STATUS OF AMENDMENTS

A Request for Reconsideration was filed on December 29, 2008. A subsequent Advisory Action, dated January 9, 2009, indicated that the Request for Reconsideration was considered, but did not place the present application in condition for allowance.

Appellants note that the Advisory Action further indicated that the proposed amendments will not be entered because they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Appellants assume that this indication is in error since no amendment was filed subsequent to the final Office Action, dated October 27, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the paragraphs that follow, a concise explanation of the independent claims, each dependent claim argued separately, and the claims reciting means-plus-function or step-plus-function language that are involved in this appeal will be provided by referring, in parenthesis, to examples of where support can be found in the specification and drawings.

Claim 46 is directed to a device that comprises a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate the channelized SONET data stream into constituent tributary data streams (e.g., 50, 52, Fig. 4; 92, Fig. 7; p. 11, line 29 to p. 12, line 4), where the tributary data streams simultaneously include a packet over SONET (POS) tributary data stream (e.g., 32, 44, Fig. 3; p. 11, line 29 to p. 12, line 4), and an asynchronous transfer mode (ATM) tributary data stream (e.g., 34, 46, Fig. 3; p. 11, line 29 to p. 12, line 4); and a line card (e.g., 53, 59, Fig. 4) coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data stream (e.g. p. 11, lines 1-8).

Claim 47 recites that the channelized SONET data stream is received over a single optical fiber (e.g., 36, 38, Fig. 3).

Claim 48 that the tributary data streams additionally include a Point to Point Protocol (PPP) over a DS tributary data stream (e.g., 42, Fig. 3; p. 9, line 30 to page 10, line 2).

Claim 52 recites that the tributary data streams additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream (e.g., 36, 38, 44, 46, Fig. 3).

Claim 53 is directed to one or more devices in a data processing environment comprising a multiplexer configured to simultaneously receive tributary data streams (e.g., 50, 52, Fig. 4;

106, Fig. 7; p. 11, lines 1-4) including a packet over synchronous optical network (POS) tributary data stream (e.g., 32, 44, Fig. 3; p. 11, lines 1-4 and 9-17), and an asynchronous transfer mode (ATM) tributary data stream (e.g., 34, 46, Fig. 3; p. 11, lines 1-4 and 9-17), the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream (e.g., p. 11, lines 1-4 and 9-17); and a line card coupled to the multiplexer and configured to receive the single channelized SONET data stream (e.g., 53, 59, Fig. 4; p. 11, lines 1-4 and 9-17).

Claim 54 recites that the simultaneously received tributary data streams additionally include a Point to Point Protocol (PPP) over a DS tributary data stream (e.g., 42, Fig. 3; p. 9, line 30 to page 10, line 2).

Claim 58 recites that the simultaneously received tributary data streams additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream (e.g., 36, 38, 44, 46, Fig. 3).

Claim 59 is directed to a forwarding node (e.g., 1, Fig. 1; p. 8, lines 3-5) for directing data in a network, the forwarding node including means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams (e.g., 20, Fig. 2; p. 9, lines 12-16), the at least two simultaneous tributary SONET data streams including a packet over synchronous optical network (POS) tributary data stream (e.g., 32, 44, Fig. 3; p. 11, lines 1-4 and 9-17), and an asynchronous transfer mode (ATM) tributary data stream (e.g., 34, 46, Fig. 3; p. 11, lines 1-4 and 9-17); and means for transmitting the at least two simultaneous tributary SONET data streams as a single SONET data stream (e.g., 20, Fig. 2; p. 10, lines 17-19).

Claim 60 recites that the at least two simultaneous tributary data streams additionally

include a Point to Point Protocol (PPP) over a DS tributary data stream (e.g., 42, Fig. 3; p. 9, line 30 to page 10, line 2).

Claim 64 recites that the at least two simultaneous tributary data streams additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream (e.g., 36, 38, 44, 46, Fig. 3).

Claim 65 is directed to a method for transmitting information over a fiber optic cable. The method comprises constructing a packet over synchronous optical network (POS) data stream (e.g., 32, 44, Fig. 3; 110, Fig. 8; p. 11, lines 1-4 and 9-17; p. 12, lines 19-22); constructing an asynchronous transfer mode (ATM) data stream (e.g., 34, 46, Fig. 3; 110, Fig. 8; p. 11, lines 1-4 and 9-17; p. 12, lines 19-22); combining the POS data stream and the ATM data stream into a single channelized synchronous optical network (SONET) data stream (e.g., 20, Fig. 2; p. 9, lines 12-16; p. 11, lines 1-4 and 9-17); and transmitting the single SONET data stream (e.g., 20, Fig. 2; p. 10, lines 17-19).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 46, 47, and 59 stand rejected under 35 U.S.C. § 103(a) as unpatentable over VOGEL (U.S. Patent No. 6,075,788) in view of MASTER et al. (U.S. Patent No. 6,237,029).

B. Claims 48-58 and 60-64 stand rejected under 35 U.S.C. § 103(a) as unpatentable over VOGEL in view of MASTER et al., and further in view of SCHMIDT et al. (U.S. Patent No. 6,205,154).

C. Claims 65-69 stand rejected under 35 U.S.C. § 103(a) as unpatentable over VOGEL further in view of SCHMIDT et al.

D. Claims 46, 47, and 59 stand rejected on the ground of non-statutory obviousness-type double patenting as unpatentable over claims 1, 3, 5, and 8 of BROMLEY et al. (U.S. Patent No. 6,658,021) in view of MASTER et al., and further in view of VOGEL.

E. Claims 45-58 and 60-64 stand rejected on the ground of non-statutory obviousness-type double patenting as unpatentable over claims 1, 3, 5, and 8 of BROMLEY et al. in view of MASTER et al., further in view of VOGEL, and still further in view of SCHMIDT et al.

F. Claims 65-69 stand rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5, and 8 of BROMLEY et al. in view of VOGEL, and further in view of SCHMIDT et al.

VII. ARGUMENTS**A. The rejection of claims 46, 47, and 59 under 35 U.S.C. § 103(a) based on VOGEL and MASTER et al. should be reversed.**

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S. Ct. 684, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

1. Claim 46.

Independent claim 46 is directed to a device comprising a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including a packet over SONET (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream; and a line card coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data stream. VOGEL and MASTER et al., whether taken alone or in any reasonable combination, do

not disclose or suggest this combination of features.

For example, VOGEL and MASTER et al. do not disclose or suggest a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including a packet over SONET (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream. The Examiner relies on col. 5, line 25 to col. 6, line 61, of VOGEL for allegedly disclosing "a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate channelized SONET data stream into constituent tributary data streams" and "packet over SONET tributary data streams ... and an asynchronous transfer mode (ATM) tributary data stream ... and a demultiplexer with the channelized SONET data stream" (final Office Action, p. 3). The Examiner admits that VOGEL does not disclose "tributary data streams simultaneously" and relies on Fig. 3B of MASTER et al. for allegedly disclosing this feature (final Office Action, p. 3). Appellants object to the Examiner's piecemeal attempt at reconstructing Appellants' claim 46.

Appellants' claim 46 does not recite "a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate channelized SONET data stream into constituent tributary data streams," "packet over SONET tributary data streams ... and an asynchronous transfer mode (ATM) tributary data stream ... and a demultiplexer with the channelized SONET data stream," and "tributary data streams simultaneously," as the Examiner alleges. Instead, Appellants' claim 46 specifically recites a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into

constituent tributary data streams, the tributary data streams simultaneously including a POS tributary data stream, and an ATM tributary data stream. Instead of addressing this specifically recited feature of claim 46, the Examiner breaks the feature down into illogical portions and points to a section of VOGEL for allegedly disclosing one portion and on an unrelated section of MASTER et al. for allegedly disclosing another portion of claim 46. Appellants submit that such attempts at reconstructing Appellants' claims are clearly impermissible.

Appellants note that since, as the Examiner admits, VOGEL does not disclose the tributary of data streams simultaneously including a POS tributary data stream and an ATM tributary data stream, VOGEL cannot reasonably be relied on for disclosing a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream, as recited in claim 46.

Nevertheless, at col. 5, line 25 to col. 6, line 61, VOGEL discloses that a single-chip SONET physical layer device 30 that includes a control port 32, UTOPIA bus interface port 34, a standard bus interface port 36, a SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, point-to-point (PPP) processing block 44, SONET framer block 46, and SONET line interface 48. VOGEL does not disclose or suggest that SONET device 30 includes a demultiplexer or that control port 32, UTOPIA bus interface port 34, standard bus interface port 36, SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, PPP processing block 44, SONET framer block 46, or SONET line interface 48 performs demultiplexing. Moreover, the Examiner

provides no explanation as to why one skilled in the art would reasonably construe control port 32, UTOPIA bus interface port 34, standard bus interface port 36, SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, PPP processing block 44, SONET framer block 46, or SONET line interface 48 as a demultiplexer, as that device is known in the art. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 46.

In addition, VOGEL discloses that SONET device 30 operates in one of three modes. Specifically, VOGEL discloses that SONET device 30 can transmit standard ATM cells in SONET synchronous payload envelope (SPE) fields (col. 5, line 50 to page 6, line 24), PPP data frames in ATM cells in SONET SPE fields (col. 6, lines 25-37), and PPP data frames from a UTOPIA Interface in SONET SPE fields (col. 6, lines 41-61). VOGEL does not disclose or suggest that any of these different modes includes the use of a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream, as recited in claim 46. In fact, the entire VOGEL disclosure does not even mention a demultiplexer.

The disclosure of MASTER et al. does not remedy the above deficiency in the disclosure of VOGEL. In Fig. 3B, MASTER et al. depicts a typical multiplexing structure that is described in the background section of MASTER et al. (col. 2, lines 23-24). This figure of MASTER et al. in no way discloses or suggests a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an

ATM tributary data stream, as recited in claim 46. In fact, this figure of MASTER et al. in no way discloses or suggests tributary data streams that simultaneously include a POS tributary data stream and an ATM tributary data stream. Moreover, Appellants note that the entire MASTER et al. disclosure does not even mention the SONET protocol. The Examiner provides no explanation as to how this figure of MASTER et al. can reasonably be construed as disclosing the above feature of claim 46. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 46.

Therefore, even if MASTER et al. were combined with VOGEL, such a combination could not fairly be construed to disclose a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream, as recited in claim 46. Further, even if for the sake of argument, the combination of MASTER et al. with VOGEL could fairly be construed to disclose each of the features of claim 46, Appellants assert that the reasons for combining MASTER et al. with VOGEL do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining MASTER et al. with VOGEL, the Examiner alleges (final Office Action, p. 3):

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the tributary data streams simultaneously of Master in place of the tributary data streams of Vogel in order to create SONET or SDH which can be add/drop multiplexed in compliance with the SONET or SDH standard.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be

insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating MASTER et al.'s typical multiplexing structure, depicted in Fig. 3B of MASTER et al., into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to receive tributary data streams that simultaneously include a POS tributary data stream and an ATM tributary data stream. The Examiner's allegations fall short of providing the articulated reasoning required by KSR.

Moreover, Appellants note that VOGEL is directed to a SONET physical layer device 30 (Abstract). MASTER et al. is directed to adaptable digital protocol processing (Abstract). MASTER et al. does not relate to the SONET protocol. Clearly, there can be no motivation to combine the SONET physical layer device of VOGEL and the non-SONET multiplexing format aspects of MASTER et al. to achieve Appellants' invention. These references are unrelated. One of ordinary skill in the art would not have been motivated to combine disparate features from MASTER et al. with VOGEL, absent impermissible hindsight.

Since VOGEL and MASTER et al. do not disclose or suggest a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream, VOGEL and MASTER et al.

cannot disclose or suggest a line card coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data stream, as also recited in claim 46.

For at least the foregoing reasons, Appellants submit that the rejection of claim 46 under 35 U.S.C. § 103(a) based on VOGEL and MASTER et al. is improper. Accordingly, Appellants request that the rejection be reversed.

2. Claim 47.

Claim 47 depends from claim 46. Therefore, Appellants submit that the rejection of claim 46 under 35 U.S.C. § 103(a) based on VOGEL and MASTER et al. is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL and MASTER et al. for reasons of its own.

Claim 47 recites that the channelized SONET data stream is received over a single optical fiber. The Examiner relies on element 38 in Fig. 3 and col. 3, line 65 to col. 4, line 9, of VOGEL et al. for allegedly disclosing this feature (final Office Action, p. 3). Appellants disagree with the Examiner's interpretation of VOGEL.

Element 38 in Fig. 3 of VOGEL corresponds to a SONET interface port (col. 5, lines 25-31). VOGEL does not disclose or suggest that SONET interface port 38 receives a channelized SONET data stream (which is separated into constituent tributary data streams, where the tributary data streams simultaneously including a POS tributary data stream and an ATM tributary data stream) over a single optical fiber, as would be required of VOGEL based on the Examiner's interpretation of claim 47. In fact, Appellants note that since, as the Examiner admits, VOGEL does not disclose the tributary of data streams simultaneously including a POS

tributary data stream and an ATM tributary data stream, VOGEL cannot reasonably be relied on for disclosing that the channelized SONET data stream (which is separated into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream) is received over a single optical fiber, as recited in claim 47.

Further with respect to the above element of VOGEL, the Examiner alleges "38 per Fig 3 is connected to an inherent single optical fiber" (final Office Action, p. 3). Appellants submit that the Examiner does not explain what an "inherent" single optical fiber is or how one differs from a single optical fiber. If the Examiner is alleging that VOGEL's SONET interface port 38 inherently connects to only a single optical fiber, Appellants submit that the Examiner does not provide the necessary evidence to support this inherency assertion. In this respect, Appellants rely on Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), indicating that the Examiner, when relying on the theory of inherency, must provide "a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." To the contrary, the Examiner provides no evidence that SONET interface port 38 inherently connects only to a single optical fiber.

At col. 3, line 65 to col. 4, line 11, VOGEL discloses:

The Synchronous Optical NETwork (SONET) physical layer device of the present invention is a single-chip device that enables data to be transmitted over a SONET communications link in a variety of standard and non-standard transmission modes. These transmission modes include transmitting ATM cells in SONET SPEs, transmitting PPP frames in ATM cells in SONET SPEs, transmitting PPP frames from a Universal Test and Operations Interface for ATM

(UTOPIA) in SONET SPEs, and transmitting PPP frames directly in SONET SPEs.

FIG. 1 is a diagram illustrating a standard ATM UNI cell 10, which is formed of 53 octets, including a 5-octet header field 12 and a 48-octet payload field 14.

This section of VOGEL discloses that a SONET physical layer device enables data to be transmitted over a SONET communications link in the following modes: 1) transmitting ATM cells in SONET SPEs, 2) transmitting PPP frames in ATM cells in SONET SPEs, 3) transmitting PPP frames from a Universal Test and Operations Interface for ATM (UTOPIA) in SONET SPEs, and 4) transmitting PPP frames directly in SONET SPEs. This section of VOGEL does not disclose or suggest that a channelized SONET data stream (which is separated into constituent tributary data streams, where the tributary data streams simultaneously including a POS tributary data stream and an ATM tributary data stream) is received over a single optical fiber, as recited in claim 47. In fact, Appellants note that since, as the Examiner admits, VOGEL does not disclose the tributary of data streams simultaneously including a POS tributary data stream and an ATM tributary data stream, VOGEL cannot reasonably be relied on for disclosing that the channelized SONET data stream (which is separated into constituent tributary data streams, where the tributary data streams simultaneously include a POS tributary data stream, and an ATM tributary data stream) is received over a single optical fiber, as recited in claim 47.

The disclosure of MASTER et al. does not remedy the above deficiency in the disclosure of VOGEL.

For at least the foregoing reasons, Appellants submit that the rejection of claim 47 under 35 U.S.C. § 103(a) based on VOGEL and MASTER et al. is improper. Accordingly, Appellants request that the rejection be reversed.

3. Claim 59.

Independent claim 59 is directed to a forwarding node for directing data in a network. The forwarding node includes means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams, where the at least two simultaneous tributary SONET data streams includes a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream; and means for transmitting the at least two simultaneous tributary SONET data streams as a single SONET data stream. VOGEL and MASTER et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, VOGEL and MASTER et al. do not disclose or suggest means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream. The Examiner relies on col. 5, line 25 to col. 6, line 61, of VOGEL for allegedly disclosing "Means for transmitting the tributary SONET data streams as a single SONET data stream" (final Office Action, p. 4). The Examiner admits that VOGEL does not disclose "transmitting at least two simultaneous tributary streams" and relies on Fig. 3B of MASTER et al. for allegedly disclosing this feature (final Office Action, p. 4). Appellants object to the Examiner's piecemeal attempt at reconstructing Appellants' claim 59.

Appellants' claim 59 does not recite "Means for transmitting the tributary SONET data streams as a single SONET data stream" and "transmitting at least two simultaneous tributary streams," as the Examiner alleges. Instead, Appellants' claim 59 specifically recites means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS

tributary data stream and an ATM tributary data stream) as a single SONET data stream. Instead of addressing this specifically recited feature of claim 59, the Examiner breaks the feature down into illogical portions and points to a section of VOGEL for allegedly disclosing one portion and on an unrelated section of MASTER et al. for allegedly disclosing another portion of claim 59. Appellants submit that such attempts at reconstructing Appellants' claims are clearly impermissible.

Appellants note that since, as the Examiner admits, VOGEL does not disclose transmitting at least two simultaneous tributary streams, VOGEL cannot reasonably be relied on for disclosing means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as recited in claim 59.

Nevertheless, at col. 5, line 25 to col. 6, line 61, VOGEL discloses that a single-chip SONET physical layer device 30 that includes a control port 32, UTOPIA bus interface port 34, a standard bus interface port 36, a SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, point-to-point (PPP) processing block 44, SONET framer block 46, and SONET line interface 48. VOGEL does not disclose or suggest that SONET device 30 includes means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream or that control port 32, UTOPIA bus interface port 34, standard bus interface port 36, SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, PPP processing block 44, SONET framer block 46, or SONET line interface 48 transmit the at least two simultaneous tributary SONET data

streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as would be required of VOGEL based on the Examiner's apparent interpretation of claim 59. Moreover, the Examiner provides no explanation as to why one skilled in the art would reasonably construe control port 32, UTOPIA bus interface port 34, standard bus interface port 36, SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, PPP processing block 44, SONET framer block 46, or SONET line interface 48 as transmitting at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 59.

In addition, VOGEL discloses that SONET device 30 operates in one of three modes. Specifically, VOGEL discloses that SONET device 30 can transmit standard ATM cells in SONET synchronous payload envelope (SPE) fields (col. 5, line 50 to page 6, line 24), PPP data frames in ATM cells in SONET SPE fields (col. 6, lines 25-37), and PPP data frames from a UTOPIA Interface in SONET SPE fields (col. 6, lines 41-61). VOGEL does not disclose or suggest that any of these different modes includes transmission of at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream. VOGEL does not disclose or suggest means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as recited in claim 59.

The disclosure of MASTER et al. does not remedy the above deficiency in the disclosure

of VOGEL. In Fig. 3B, MASTER et al. depicts a typical multiplexing structure that is described in the background section of MASTER et al. (col. 2, lines 23-24). This figure of MASTER et al. in no way discloses or suggests means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as recited in claim 59. In fact, this figure of MASTER et al. in no way discloses or suggests at least two simultaneous tributary SONET data streams, which include a POS tributary data stream and an ATM tributary data stream. Moreover, Appellants note that the entire MASTER et al. disclosure does not even mention the SONET protocol. The Examiner provides no explanation as to how this figure of MASTER et al. can reasonably be construed as disclosing the above feature of claim 59. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 59.

Therefore, even if MASTER et al. were combined with VOGEL, such a combination could not fairly be construed to disclose means for transmitting the at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as recited in claim 59. Further, even if for the sake of argument, the combination of MASTER et al. with VOGEL could fairly be construed to disclose each of the features of claim 59, Appellants assert that the reasons for combining MASTER et al. with VOGEL do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining MASTER et al. with VOGEL, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one of ordinary skill in the art at the time of the invention to add creating at least two simultaneous tributary streams and transmitting at least two simultaneous tributary streams of Master in place of the tributary data streams of Vogel in order to create SONET or SDH which can be add/drop multiplexed in compliance with the SONET or SDH standards.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating MASTER et al.'s typical multiplexing structure, depicted in Fig. 3B of MASTER et al., into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to transmit at least two simultaneous tributary SONET data streams (which include a POS tributary data stream and an ATM tributary data stream) as a single SONET data stream, as recited in claim 59. The Examiner's allegations fall short of providing the articulated reasoning required by KSR.

Moreover, Appellants note that VOGEL is directed to a SONET physical layer device 30 (Abstract). MASTER et al. is directed to adaptable digital protocol processing (Abstract). MASTER et al. does not relate to the SONET protocol. Clearly, there can be no motivation to combine the SONET physical layer device of VOGEL and the non-SONET multiplexing format aspects of MASTER et al. to achieve Appellants' invention. These references are unrelated. One of ordinary skill in the art would not have been motivated to combine disparate features from

MASTER et al. with VOGEL, absent impermissible hindsight.

For at least the foregoing reasons, Appellants submit that the rejection of claim 59 under 35 U.S.C. § 103(a) based on VOGEL and MASTER et al. is improper. Accordingly, Appellants request that the rejection be reversed.

B. The rejection of claims 48-58 and 60-64 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. should be reversed.

1. Claim 48.

Claim 48 depends from claim 46. While not acquiescing in the rejection of claim 48, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 46. Therefore, Appellants submit that the rejection of claim 48 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 48 recites that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a Point to Point Protocol (PPP) over a DS tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, p. 4). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels.

This section of SCHMIDT et al. does not disclose or suggest a PPP over a DS tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention a PPP over a DS tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 48.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 48. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 48, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al., the Examiner alleges (final Office Action, p. 4):

It would have been obvious to add the DS tributary of the Schmidt to the PPP packet to the SONET the combination of Vogel and Master in order to be standards compliant and build a system which is inoperable with legacy SONET systems.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged

benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a PPP over a DS tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to become standards compliant or make VOGEL's SONET physical layer device 30 interoperable with legacy SONET systems. The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least these additional reasons, Appellants submit that the rejection of claim 48 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

2. Claims 49-51.

Claim 49-51 depend from claim 46. While not acquiescing in the rejection of claims 49-51, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 46. Therefore, Appellants submit that the rejection of claims 49-51 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed.

3. Claim 52.

Claim 52 depends from claim 46. While not acquiescing in the rejection of claim 52, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 46. Therefore, Appellants submit that the rejection of claim 52 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 52 recites that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, pp. 5-6). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels. This section of SCHMIDT et al. does not disclose or suggest a POS tributary data stream and an ATM tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention a POS tributary data stream or an ATM tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally

include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 52.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 52. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 52, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al., the Examiner alleges (final Office Action, p. 6):

It would have been obvious to add the composite tributary streams of Schmidt in place of the STS SPE of the combination of Vogel and Master in order to carry the POS and ATM data simultaneously in order to more efficiently utilize the bandwidth and also be standards compliant.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to utilize bandwidth more efficiently or become standards compliant. The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least these additional reasons, Appellants submit that the rejection of claim 52 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

4. Claims 53 and 55-57.

Independent claim 53 is directed to one or more devices in a data processing environment that includes a multiplexer configured to simultaneously receive tributary data streams including a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream; and a line card coupled to the multiplexer and configured to receive the single channelized SONET data stream. VOGEL, MASTER et al., and SCHMIDT et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, VOGEL, MASTER et al., and SCHMIDT et al. do not disclose or suggest a multiplexer configured to simultaneously receive tributary data streams including a POS

tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream. The Examiner relies on col. 5, line 25 to col. 6, line 61, of VOGEL for allegedly disclosing "a multiplexer configured to receive tributary data streams," "Packet over synchronous optical network (POS) tributary data stream," "[a]n asynchronous transfer mode (ATM tributary data stream," and "[t]he multiplexer being further being configured to provide a tributary streams" (final Office Action, p. 6). The Examiner admits that VOGEL does not disclose "simultaneously receiving tributary data streams or combining the tributary data streams into single channel SONET data stream" and relies on Fig. 3B of MASTER et al. for allegedly disclosing "simultaneously receiving tributary data streams" and on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing "combining the tributary data streams into single channel SONET data stream" (final Office Action, pp. 6-7). Appellants object to the Examiner's piecemeal attempt at reconstructing Appellants' claim 53.

Appellants' claim 53 does not recite "a multiplexer configured to receive tributary data streams," "Packet over synchronous optical network (POS) tributary data stream," "[a]n asynchronous transfer mode (ATM tributary data stream," "[t]he multiplexer being further being configured to provide a tributary streams, "simultaneously receiving tributary data streams," and "combining the tributary data streams into single channel SONET data stream" as the Examiner alleges. Instead, Appellants' claim 53 specifically recites a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream.

Instead of addressing this specifically recited feature of claim 53, the Examiner breaks the feature down into illogical portions and points to a section of VOGEL for allegedly disclosing a portion of the above feature of claim 53, on an unrelated section of MASTER et al. for allegedly disclosing another portion of the above feature of claim 53, and on still another unrelated section of SCHMIDT et al. for allegedly disclosing yet another portion of the above feature of claim 53. Appellants submit that such attempts at reconstructing Appellants' claims are clearly impermissible.

Appellants note that since, as the Examiner admits, VOGEL does not disclose simultaneously received tributary data streams including a POS tributary data stream and an ATM tributary data stream, VOGEL cannot reasonably be relied on for disclosing a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, as recited in claim 53.

Nevertheless, at col. 5, line 25 to col. 6, line 61, VOGEL discloses that a single-chip SONET physical layer device 30 that includes a control port 32, UTOPIA bus interface port 34, a standard bus interface port 36, a SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, point-to-point (PPP) processing block 44, SONET framer block 46, and SONET line interface 48. The Examiner relies on VOGEL's SONET framer block 46 as allegedly corresponding to the recited multiplexer (final Office Action, p. 6). Appellants note, however, that VOGEL does not disclose or suggest that VOGEL's SONET framer block 46 includes a multiplexer or even performs multiplexing.

Instead, VOGEL merely discloses that SONET framer block 46 forms a SONET frame (see, for example, col. 6, lines 1-3). The Examiner provides no explanation as to why one skilled in the art would reasonably construe VOGEL's SONET framer block 46 as a multiplexer, as that device is known in the art. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 53.

In addition, VOGEL discloses that SONET device 30 operates in one of three specific modes. Specifically, VOGEL discloses that SONET device 30 can transmit standard ATM cells in SONET synchronous payload envelope (SPE) fields (col. 5, line 50 to page 6, line 24), PPP data frames in ATM cells in SONET SPE fields (col. 6, lines 25-37), and PPP data frames from a UTOPIA Interface in SONET SPE fields (col. 6, lines 41-61). VOGEL does not disclose or suggest that any of these specifically disclosed modes includes the use of a multiplexer that is configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, as recited in claim 53.

The disclosures of MASTER et al. and SCHMIDT et al. do not remedy the above deficiency in the disclosure of VOGEL. In Fig. 3B, MASTER et al. depicts a typical multiplexing structure that is described in the background section of MASTER et al. (col. 2, lines 23-24). This figure of MASTER et al. in no way discloses or suggests a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, as

recited in claim 53. In fact, this figure of MASTER et al. in no way discloses or suggests simultaneously received tributary data streams that include a POS tributary data stream and an ATM tributary data stream. Moreover, Appellants note that the entire MASTER et al. disclosure does not even mention the SONET protocol. The Examiner provides no explanation as to how this figure of MASTER et al. can reasonably be construed as disclosing the above feature of claim 53. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 53.

At col. 3, lines 33-67, SCHMIDT et al. discloses:

The basic rate at which SONET operates is STS-1 ("Synchronous Transport Signal" Level-1), which supports data transmission at 51.84 Mbits/s. The optical counterpart of STS-1 is OC-1 ("Optical Carrier" Level-1). In SONET networks, higher transmission rates are direct multiples of the basic rate, for instance, STS-48/OC-48 is 48 times STS-1/OC-1 or 2.48 Gbits/s. SONET transmission equipment interleaves STS-1 channels with other STS-1 channels in simple integer multiples to form a synchronous high speed signal which carries multiple service requests. This functionality permits easy access to lower speed signals, such as T1 (a rate of 1.544 Mbps in North America) and T3 (a rate of 44.736 Mbps globally), without multi-stage multiplexing or demultiplexing. In SONET networks, the lower speed signals are mapped into sub-STS-1 signals called Virtual Tributaries ("VT"). VTs are sub-SONET bandwidth structures which are designed for the transporting and switching of sub-T3 (below 44.736 Mbps) loads. These VTs can be easily combined or concatenated for transmission of various types of services through a network. For example, an STS-1 channel is defined as having 28 VT1.5 channels, each channel having the capacity to carry a T1 service.

More specifically, an OC-N SONET facility is divided into N STS-1 time slots, each of which comprises 28 VT1.5 time slots. The STS-1 time slots are ordered 1 through N, where N can be as high as 48. Each T1 service is carried by a single VT1.5 time slot in a single STS-1 time slot. A T3 service requires a single STS-1 time slot and a STS-3c service requires three contiguous STS-1 time slots. Altogether the SONET facility can carry as many as 28 N T1's, N T3's or N/3 STS-3c's, or various combinations of these services.

In addition to automatic path selection, the present invention prevents bandwidth

fragmentation and optimizes bandwidth utilization by selecting the time slot which maximizes....

This section of SCHMIDT et al. discloses SONET transmission equipment that interleaves STS-1 channels with other STS-1 channels. SCHMIDT et al. discloses that this functionality permits easy access to lower speed signals, such as T1 (a rate of 1.544 Mbps in North America) and T3 (a rate of 44.736 Mbps globally), without multi-stage multiplexing or demultiplexing. Thus, this section of SCHMIDT et al. teaches away from the use of a multiplexer or demultiplexer. This section of SCHMIDT et al. in no way discloses or suggests a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, as recited in claim 53.

Therefore, even if MASTER et al. and SCHMIDT et al. were combined with VOGEL, such a combination could not fairly be construed to disclose a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, as recited claim 53. Further, even if for the sake of argument, the combination of MASTER et al. and SCHMIDT et al. with VOGEL could fairly be construed to disclose each of the features of claim 53, Appellants assert that the reasons for combining MASTER et al. and SCHMIDT et al. with VOGEL do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining MASTER et al. and SCHMIDT

et al. with VOGEL, the Examiner alleges (final Office Action, pp. 6-7):

It would have been obvious to add the VTs of the Schmidt to the STS-1 of Vogel in order to carry a combined stream of packet over SONET and ATM over SONET in a single SONET stream in order to better utilize the bandwidth as well as standards compliant in order to interoperate with legacy SONET systems.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the tributary data streams simultaneously of Master in place of the tributary data streams of Vogel and Schnidy in order to create SONET or SDH which can be add/drop multiplexed in compliance with the SONET or SDH standards.

Appellants submit that the Examiner's allegations are merely conclusory statements of alleged benefits of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating MASTER et al.'s typical multiplexing structure, depicted in Fig. 3B of MASTER et al., into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to receive tributary data streams that simultaneously include a POS tributary data stream and an ATM tributary data stream. The Examiner's allegations fall short of providing the articulated reasoning required by KSR.

Moreover, the Examiner does not explain how incorporating SCHMIDT et al.'s channel interleaving technique into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to interoperate with legacy SONET systems, as the Examiner

alleges. The Examiner's allegations fall short of providing the articulated reasoning required by KSR.

Moreover, Appellants note that VOGEL is directed to a SONET physical layer device 30 (Abstract). MASTER et al. is directed to adaptable digital protocol processing (Abstract). MASTER et al. does not relate to the SONET protocol. Clearly, there can be no motivation to combine the SONET physical layer device of VOGEL and the non-SONET multiplexing format aspects of MASTER et al. to achieve Appellants' claimed invention. These references are unrelated. One of ordinary skill in the art would not have been motivated to combine disparate features from MASTER et al. with VOGEL, absent impermissible hindsight.

Since VOGEL, MASTER et al., and SCHMIDT et al. do not disclose or suggest a multiplexer configured to simultaneously receive tributary data streams including a POS tributary data stream, and an ATM tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized SONET data stream, VOGEL, MASTER et al., and SCHMIDT et al. cannot disclose or suggest a line card coupled to the multiplexer and configured to receive the single channelized SONET data stream, as also recited in claim 53.

For at least the foregoing reasons, Appellants submit that the rejection of claim 53 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

Claims 55-57 depend from claim 53. Therefore, Appellants submit that the rejection of claims 55-57 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al.

is improper for at least the reasons given above with respect to claim 53. Accordingly, Appellants request that the rejection be reversed.

5. Claim 54.

Claim 54 depends from claim 53. Therefore, Appellants submit that the rejection of claim 54 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 53. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 54 recites that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a Point to Point Protocol (PPP) over a DS tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, p. 7). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels. This section of SCHMIDT et al. does not disclose or suggest a PPP over a DS tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention a PPP over a DS tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 54.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 54. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 54, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al., the Examiner alleges (final Office Action, p. 7):

It would have been obvious to add the DS tributary of the Schmidt to the PPP packet of the combination of Vogel, Schmidt, and Master in order to be standards compliant and build a system which is interoperable with legacy SONET systems.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a PPP over a DS tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to become standards compliant or

make VOGEL's SONET physical layer device 30 interoperable with legacy SONET systems.

The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least the foregoing reasons, Appellants submit that the rejection of claim 54 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

6. Claim 58.

Claim 58 depends from claim 53. Therefore, Appellants submit that the rejection of claim 58 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 53. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 58 recites that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, p. 8). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels. This section of SCHMIDT et al. does not disclose or suggest a POS tributary data stream and an ATM tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention

a POS tributary data stream or an ATM tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 58.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the simultaneously received tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 58. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 58, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER, the Examiner alleges (final Office Action, p. 8):

It would have been obvious to add the composite tributary streams of Schmidt in place of the STS SPE of Vogel, Schmidt and Master in order to carry the POS and ATM data simultaneously in order to more efficiently utilize the bandwidth and also be standards compliant.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely

upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to utilize bandwidth more efficiently or become standards compliant. The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least these additional reasons, Appellants submit that the rejection of claim 58 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

7. Claim 60.

Claim 60 depends from claim 59. While not acquiescing in the rejection of claim 60, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 59. Therefore, Appellants submit that the rejection of claim 60 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 59. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 60 recites that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a Point to Point Protocol (PPP) over a DS tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, p. 8). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels. This section of SCHMIDT et al. does not disclose or suggest a PPP over a DS tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention a PPP over a DS tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 60.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a PPP over a DS tributary data stream, as recited in claim 60. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 60, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al., the Examiner alleges (final Office Action, p. 8):

It would have been obvious to add the DS tributary of the Schmidt to the PPP packet of the combination of Vogel and Master in order to be standards compliant and build a system which is interoperable with legacy SONET system.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a PPP over a DS tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to become standards compliant or make VOGEL's SONET physical layer device 30 interoperable with legacy SONET systems. The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least these additional reasons, Appellants submit that the rejection of claim 60 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

8. Claims 61-63.

Claims 61-63 depend from claim 59. While not acquiescing in the rejection of claims 61-63, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 59.

Therefore, Appellants submit that the rejection of claims 61-63 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 59. Accordingly, Appellants request that the rejection be reversed.

9. Claim 64.

Claim 64 depends from claim 59. While not acquiescing in the rejection of claim 64, Appellants submit that the disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of VOGEL and MASTER et al. set forth above with respect to claim 59. Therefore, Appellants submit that the rejection of claim 64 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 59. Accordingly, Appellants request that the rejection be reversed. Moreover, this claim is patentable over VOGEL, MASTER et al., and SCHMIDT et al. for reasons of its own.

Claim 64 recites that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream. The Examiner admits that VOGEL and MASTER et al. do not disclose this feature and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing this feature (final Office Action, p. 10). Appellants disagree with the Examiner's interpretation of SCHMIDT et al.

At col. 3, lines 33-67, SCHMIDT et al. discloses that SONET transmission equipment interleaves Synchronous Transport Signal Level-1 (STS-1) channels with other STS-1 channels.

This section of SCHMIDT et al. does not disclose or suggest a POS tributary data stream and an ATM tributary data stream. In fact, the entire SCHMIDT et al. disclosure does not even mention a POS tributary data stream or an ATM tributary data stream. Thus, neither the above section nor any other section of SCHMIDT et al. can disclose or suggest that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 64.

Therefore, even if SCHMIDT et al. were combined with VOGEL and MASTER et al., such a combination could not fairly be construed to disclose that the at least two simultaneous tributary data streams (which include a POS tributary data stream and an ATM tributary data stream) additionally include a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream, as recited in claim 64. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL and MASTER et al. could fairly be construed to disclose the above feature of claim 64, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al. do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL and MASTER et al., the Examiner alleges (final Office Action, p. 10):

It would have been obvious to add the composite tributary streams of Schmidt in place of the STS SPE of the combination of Vogel and Master in order to carry

the POS and ATM data simultaneously in order to more efficiently utilize the bandwidth and also be standards compliant.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s alleged disclosure of a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to utilize bandwidth more efficiently or become standards compliant. The Examiner provides no basis for these allegations. Thus, the Examiner's allegations fall short of providing the articulated reasoning required by KSR.

For at least these additional reasons, Appellants submit that the rejection of claim 64 under 35 U.S.C. § 103(a) based on VOGEL, MASTER et al., and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

C. The rejection of claims 65-69 under 35 U.S.C. § 103(a) based on VOGEL and SCHMIDT et al. should be reversed.

1. Claims 65-69.

Independent claim 65 is directed to a method for transmitting information over a fiber

optic cable. The method includes constructing a packet over synchronous optical network (POS) data stream; constructing an asynchronous transfer mode (ATM) data stream; combining the POS data stream and the ATM data stream into a single channelized synchronous optical network (SONET) data stream; and transmitting the single SONET data stream. VOGEL and SCHMIDT et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, VOGEL and SCHMIDT et al. do not disclose or suggest combining the POS data stream and the ATM data stream into a single channelized SONET data stream. The Examiner relies on col. 5, line 25 to col. 6, line 45, of VOGEL for allegedly disclosing "[c]onstructing a single channelized synchronous optical network data stream" (final Office Action, p. 10). The Examiner admits that VOGEL does not disclose "combining the POS data stream and the ATM data stream into single data stream" and relies on col. 3, lines 33-67, of SCHMIDT et al. for allegedly disclosing "combining different services into a single data stream" (final Office Action, p. 10). Appellants submit that the Examiner's piecemeal attempt at reconstructing Appellants' claim 65 is insufficient for establishing a *prima facie* case of obviousness.

Appellants' claim 65 does not recite "[c]onstructing a single channelized synchronous optical network data stream" and "combining different services into a single data stream," as the Examiner alleges. Instead, Appellants' claim 65 specifically recites combining the POS data stream and the ATM data stream into a single channelized SONET data stream. Instead of addressing this specifically recited feature of claim 65, the Examiner breaks the feature down into illogical portions and points to a section of VOGEL for allegedly disclosing one portion of

the above feature of claim 65 and on an unrelated section of SCHMIDT et al. for allegedly disclosing another portion of the above feature of claim 65. Appellants submit that such attempts at reconstructing Appellants' claims are clearly impermissible.

Moreover, the Examiner's allegation as to what SCHMIDT et al. allegedly discloses (i.e., "combining different services into a single data stream") does not address the admitted deficiency of VOGEL. As indicated above, claim 65 does not recite combining different services into a single data stream. Instead, claim 65 specifically discloses combining the POS data stream and the ATM data stream into a single channelized SONET data stream. The Examiner's allegation regarding SCHMIDT et al. does not address this feature of claim 65.

Appellants note that since, as the Examiner admits, VOGEL does not disclose combining the POS data stream and the ATM data stream, VOGEL cannot reasonably be relied on for disclosing combining the POS data stream and the ATM data stream into a single channelized SONET data stream, as recited in claim 65.

Nevertheless, at col. 5, line 25 to col. 6, line 45, VOGEL discloses that a single-chip SONET physical layer device 30 that includes a control port 32, UTOPIA bus interface port 34, a standard bus interface port 36, a SONET interface port 38, control and management interface block 40, enhanced UTOPIA interface block 42, point-to-point (PPP) processing block 44, SONET framer block 46, and SONET line interface 48. The Examiner relies on VOGEL's SONET framer block 46 as allegedly performing the above feature of claim 65 (final Office Action, p. 10). Appellants note, however, that VOGEL in no way discloses or suggests that VOGEL's SONET framer block 46 combines the POS data stream and the ATM data stream into a single channelized SONET data stream. Instead, VOGEL merely discloses that SONET framer

block 46 forms a SONET frame (see, for example, col. 6, lines 1-3). The Examiner provides no explanation as to why one skilled in the art would reasonably construe VOGEL's SONET framer block 46 as performing combining the POS data stream and the ATM data stream into a single channelized SONET data stream. Accordingly, the Examiner has not met the initial burden of establishing a *prima facie* case of obviousness with respect to claim 65.

In addition, VOGEL discloses that SONET device 30 operates in one of three specific modes. Specifically, VOGEL discloses that SONET device 30 can transmit standard ATM cells in SONET synchronous payload envelope (SPE) fields (col. 5, line 50 to page 6, line 24), PPP data frames in ATM cells in SONET SPE fields (col. 6, lines 25-37), and PPP data frames from a UTOPIA Interface in SONET SPE fields (col. 6, lines 41-61). VOGEL does not disclose or suggest that any of these specifically disclosed modes includes combining the POS data stream and the ATM data stream into a single channelized SONET data stream, as recited in claim 65. In fact, the entire VOGEL disclosure does not even mention combining different data streams.

The disclosure of SCHMIDT et al. does not remedy the above deficiency in the disclosure of VOGEL. Col. 3, lines 33-67, of SCHMIDT et al. is reproduced above. This section of SCHMIDT et al. discloses SONET transmission equipment that interleaves STS-1 channels with other STS-1 channels. SCHMIDT et al. discloses that this functionality permits easy access to lower speed signals, such as T1 (a rate of 1.544 Mbps in North America) and T3 (a rate of 44.736 Mbps globally), without multi-stage multiplexing or demultiplexing. This section of SCHMIDT et al. in no way discloses or suggests combining the POS data stream and the ATM data stream into a single channelized SONET data stream, as recited in claim 65. In fact, this section of SCHMIDT et al. does not disclose or suggest a POS data stream and an ATM

data stream.

Therefore, even if SCHMIDT et al. were combined with VOGEL, such a combination could not fairly be construed to disclose combining the POS data stream and the ATM data stream into a single channelized SONET data stream, as recited in claim 65. Further, even if for the sake of argument, the combination of SCHMIDT et al. with VOGEL could fairly be construed to disclose each of the features of claim 65, Appellants assert that the reasons for combining SCHMIDT et al. with VOGEL do not satisfy the requirements of 35 U.S.C. § 103.

For example, with respect to the reasons for combining SCHMIDT et al. with VOGEL, the Examiner alleges (final Office Action, p. 10):

It would have been obvious to add the composite tributary streams of Schmidt in place of the STS SPE of Vogel in order to carry the POS and ATM data simultaneously in order to more efficiently utilize the bandwidth and also be standards compliant.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. 398 (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, the Examiner does not explain how incorporating SCHMIDT et al.'s interleaving of STS-1 channels into VOGEL's SONET physical layer device 30 would allow VOGEL's SONET physical layer device 30 to utilize bandwidth more efficiently and be standards compliant. The Examiner's allegations fall short of providing the articulated reasoning

required by KSR.

Since VOGEL and SCHMIDT et al. do not disclose or suggest combining the POS data stream and the ATM data stream into a single channelized synchronous optical network (SONET) data stream, VOGEL and SCHMIDT et al. cannot disclose or suggest transmitting the single SONET data stream, as also recited in claim 65.

For at least these additional reasons, Appellants submit that the rejection of claim 65 under 35 U.S.C. § 103(a) based on VOGEL and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

Claims 66-69 depend from claim 65. Therefore, Appellants submit that the rejection of claims 66-69 under 35 U.S.C. § 103(a) based on VOGEL and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 65. Accordingly, Appellants request that the rejection be reversed.

D. The rejection of claims 46, 47, and 59 under the non-statutory ground of double patenting based on BROMLEY et al., MASTER et al., and VOGEL should be reversed.

1. Claims 46 and 47.

Independent claim 46 is directed to a device comprising a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including a packet over SONET (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream; and a line card coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data

stream. Appellants submit that claims 1, 3, 5, and 8 of BROMLEY et al. do not recite, for example, a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including a packet over SONET (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, as recited in claim 46 of the present application. Instead, claim 1 of BROMLEY et al. recites an input port for receiving the data, the data being formatted as SONET frames that contain data encapsulated in one of multiple formats within the SONET frames, and decapsulation logic configured to delineate the multiple formats to identify particular ones of the multiple formats and configured to decapsulate the delineated data in the multiple formats into a packet format used in the forwarding node, the decapsulation logic performing the delineation and decapsulation without executing processor instructions (col. 16, lines 19-30). Claim 3 of BROMLEY et al. recites that the decapsulation logic includes a delineator for delineating Asynchronous Transfer Mode (ATM) cells in the data (col. 16, lines 35-37). Claim 5 of BROMLEY et al. recites that the decapsulation logic extracts Internet Protocol (IP) packets from the data. Claim 8 of BROMLEY et al. recites that the decapsulation logic includes a Point to Point Protocol (PPP) deframer for deframing PPP frames.

The Examiner alleges that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. (final Office Action, pp. 12-13) is equivalent to the demultiplexer recited in claim 46 of the present application. Appellants disagree with the Examiner's interpretation of BROMLEY et al.

BROMLEY et al. discloses a receive ASIC 70 on line card 59 that decapsulates data and determines how to direct data in an input data stream, and a transmit ASIC 64 on line card 53

that encapsulates the data in a format that is appropriate for a destination (see, for example, col. 6, line 67 to col. 7, line 6). BROMLEY et al. further discloses SONET multiplexers 50 and 52 that multiplex four OC-12 data streams into an OC-48 data stream, and demultiplexers 50 and 52 positioned at feeds of output ports that take OC-48 from the line card and split it into constituent tributaries, such as OC-12, OC-3, or OS-3 tributaries (see, for example, col. 6, lines 53-62). As shown by these disclosures, decapsulation is provided by ASIC 70 and not by demultiplexers 50 and 52. Fig. 7 of BROMLEY et al. further provides proof of the distinction between demultiplexing and decapsulation. For example, Fig. 7 shows that an OC-48 input data stream 90 is first demultiplexed 92 into separate tributaries or channels, and subsequently, packets are decapsulated 94 (see, for example, col. 7, lines 26-35).

In light of the above, Appellants submit that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. does not correspond to a demultiplexer configured to receive a channelized SONET data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including a packet over SONET (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream and a line card coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data stream, as recited in claim 46 of the present application. Moreover, the Examiner provides no explanation as to why one skilled in the art at the time of Appellants' invention would reasonably construe BROMLEY et al.'s decapsulation logic as corresponding to a demultiplexer, as that device is known in the art. Appellants submit that MASTER et al. and VOGEL do not explain why the decapsulation logic recited in claim 1 of BROMLEY et al. would be transformed into the demultiplexer recited in claim 46. The

Examiner does not provide a *prima facie* basis for establishing the double patenting rejection of claim 46.

For at least the foregoing reasons, Appellants submit that the rejection of claim 46 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., and VOGEL is improper. Accordingly, Appellants request that the rejection be reversed.

Claim 47 depends from claim 46. Therefore, Appellants submit that the rejection of claim 46 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., and VOGEL is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed.

2. Claim 59.

Independent claim 59 is directed to a forwarding node for directing data in a network. The forwarding node includes means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams, where the at least two simultaneous tributary SONET data streams includes a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream; and means for transmitting the at least two simultaneous tributary SONET data streams as a single SONET data stream.

Appellants submit that claims 1, 3, 5, and 8 of BROMLEY et al. do not recite, for example, means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams, where the at least two simultaneous tributary SONET data streams includes a packet over synchronous optical network (POS) tributary data stream, and an

asynchronous transfer mode (ATM) tributary data stream, as recited in claim 59 of the present application. Instead, claim 1 of BROMLEY et al. recites an input port for receiving the data, the data being formatted as SONET frames that contain data encapsulated in one of multiple formats within the SONET frames, and decapsulation logic configured to delineate the multiple formats to identify particular ones of the multiple formats and configured to decapsulate the delineated data in the multiple formats into a packet format used in the forwarding node, the decapsulation logic performing the delineation and decapsulation without executing processor instructions (col. 16, lines 19-30). Claim 3 of BROMLEY et al. recites that the decapsulation logic includes a delineator for delineating Asynchronous Transfer Mode (ATM) cells in the data (col. 16, lines 35-37). Claim 5 of BROMLEY et al. recites that the decapsulation logic extracts Internet Protocol (IP) packets from the data. Claim 8 of BROMLEY et al. recites that the decapsulation logic includes a Point to Point Protocol (PPP) deframer for deframing PPP frames.

The Examiner alleges that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. (final Office Action, p. 14) is equivalent to the means for creating recited in claim 59 of the present application. Appellants disagree with the Examiner's interpretation of BROMLEY et al.

BROMLEY et al. discloses a receive ASIC 70 on line card 59 that decapsulates data and determines how to direct data in an input data stream, and a transmit ASIC 64 on line card 53 that encapsulates the data in a format that is appropriate for a destination (see, for example, col. 6, line 67 to col. 7, line 6). BROMLEY et al. further discloses SONET multiplexers 50 and 52 that multiplex four OC-12 data streams into an OC-48 data stream, and demultiplexers 50 and 52 positioned at feeds of output ports that take OC-48 from the line card and split it into constituent

tributaries, such as OC-12, OC-3, or OS-3 tributaries (see, for example, col. 6, lines 53-62).

BROMLEY et al. does not disclose that decapsulation includes creating at least two simultaneous tributary SONET data streams, where the at least two simultaneous tributary SONET data streams includes a POS tributary data stream and an ATM tributary data stream.

In light of the above, Appellants submit that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. does not correspond to means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams, where the at least two simultaneous tributary SONET data streams includes a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, as recited in claim 59 of the present application. Moreover, the Examiner provides no explanation as to why one skilled in the art at the time of Appellants' invention would reasonably construe BROMLEY et al.'s decapsulation logic as corresponding to the recited means for creating. Appellants submit that MASTER et al. and VOGEL do not explain why the decapsulation logic recited in claim 1 of BROMLEY et al. would be transformed into the means for creating recited in claim 59. The Examiner does not provide a *prima facie* basis for establishing the double patenting rejection of claim 59.

For at least the foregoing reasons, Appellants submit that the rejection of claim 59 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., and VOGEL is improper. Accordingly, Appellants request that the rejection be reversed.

E. The rejection of claims 48-58 and 60-64 under the non-statutory ground of double patenting based on BROMLEY et al., MASTER et al., VOGEL, and SCHMIDT et al. should be reversed.

1. Claims 48-52.

At the outset, the fact that the Examiner must look to three separate references in an attempt to incorporate features missing from claims 1, 3, 5, and 8 of BROMLEY et al. into claims 48-52 of BROMLEY et al. is a clear indication of the inappropriateness of this double patenting rejection. Appellants request that the rejection be reversed.

Claims 48-52 depend from claim 46. The disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of BROMLEY et al., MASTER et al., and VOGEL set forth above with respect to claim 46. Therefore, Appellants submit that the rejection of claims 48-52 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., VOGEL, and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 46. Accordingly, Appellants request that the rejection be reversed.

2. Claims 53-58.

At the outset, the fact that the Examiner must look to three separate references in an attempt to incorporate features missing from claims 1, 3, 5, and 8 of BROMLEY et al. into claims 48-52 of BROMLEY et al. is a clear indication of the inappropriateness of this double patenting rejection. Appellants request that the rejection be reversed.

Independent claim 53 is directed to one or more devices in a data processing environment that includes a multiplexer configured to simultaneously receive tributary data streams including a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, the multiplexer being further configured to combine

the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream; and a line card coupled to the multiplexer and configured to receive the single channelized SONET data stream. Claims 1, 3, 5, and 8 of BROMLEY et al. do not recite, for example, a multiplexer configured to simultaneously receive tributary data streams including a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream, as recited in claim 53.

Instead, claim 1 of BROMLEY et al. recites an input port for receiving the data, the data being formatted as SONET frames that contain data encapsulated in one of multiple formats within the SONET frames, and decapsulation logic configured to delineate the multiple formats to identify particular ones of the multiple formats and configured to decapsulate the delineated data in the multiple formats into a packet format used in the forwarding node, the decapsulation logic performing the delineation and decapsulation without executing processor instructions (col. 16, lines 19-30). Claim 3 of BROMLEY et al. recites that the decapsulation logic includes a delineator for delineating Asynchronous Transfer Mode (ATM) cells in the data (col. 16, lines 35-37). Claim 5 of BROMLEY et al. recites that the decapsulation logic extracts Internet Protocol (IP) packets from the data. Claim 8 of BROMLEY et al. recites that the decapsulation logic includes a Point to Point Protocol (PPP) deframer for deframing PPP frames.

The Examiner alleges that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. (final Office Action, p. 16) is equivalent to the multiplexer recited in claim 53 of the present application. Appellants disagree with the Examiner's interpretation of BROMLEY

et al.

BROMLEY et al. discloses a receive ASIC 70 on line card 59 that decapsulates data and determines how to direct data in an input data stream, and a transmit ASIC 64 on line card 53 that encapsulates the data in a format that is appropriate for a destination (see, for example, col. 6, line 67 to col. 7, line 6). BROMLEY et al. further discloses SONET multiplexers 50 and 52 that multiplex four OC-12 data streams into an OC-48 data stream, and demultiplexers 50 and 52 positioned at feeds of output ports that take OC-48 from the line card and split it into constituent tributaries, such as OC-12, OC-3, or OS-3 tributaries (see, for example, col. 6, lines 53-62). As shown by these disclosures, decapsulation is provided by ASIC 70 and not by multiplexer 50. Fig. 7 of BROMLEY et al. further provides proof of the distinction between multiplexing and decapsulation.

In light of the above, Appellants respectfully submit that the "decapsulation logic" recited in claims 1, 3, 5, and 8 of BROMLEY et al. does not correspond to a multiplexer configured to simultaneously receive tributary data streams including a packet over synchronous optical network (POS) tributary data stream, and an asynchronous transfer mode (ATM) tributary data stream, the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream, as recited in claim 53 of the present application. Moreover, the Examiner provides no explanation as to why one skilled in the art at the time of Appellants' invention would reasonably construe BROMLEY et al.'s decapsulation logic as corresponding to the recited multiplexer, as that device is known in the art. Appellants submit that MASTER et al., VOGEL, and SCHMIDT et al. do not explain why the decapsulation logic recited in claim 1 of BROMLEY et al. would be

transformed into the multiplexer recited in claim 53. The Examiner does not provide a *prima facie* basis for establishing the double patenting rejection of claim 53.

For at least the foregoing reasons, Appellants submit that the rejection of claim 53 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., VOGEL, and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

Claims 54-58 depend from claim 53. Therefore, Appellants submit that the rejection of claims 54-58 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., VOGEL, and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 53. Accordingly, Appellants request that the rejection be reversed.

3. Claim 60-64.

At the outset, the fact that the Examiner must look to three separate references in an attempt to incorporate features missing from claims 1, 3, 5, and 8 of BROMLEY et al. into claims 60-64 of BROMLEY et al. is a clear indication of the inappropriateness of this double patenting rejection. Appellants request that the rejection be reversed.

Claims 60-64 depend from claim 59. The disclosure of SCHMIDT et al. does not remedy the deficiencies in the disclosures of BROMLEY et al., MASTER et al., and VOGEL set forth above with respect to claim 59. Therefore, Appellants submit that the rejection of claims 60-64 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., MASTER et al., VOGEL, and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 59. Accordingly, Appellants request that the rejection be reversed.

F. The rejection of claims 65-69 under the non-statutory ground of double patenting based on BROMLEY et al., VOGEL, and SCHMIDT et al. should be reversed.

1. Claims 65-69.

Independent claim 65 is directed to a method for transmitting information over a fiber optic cable. The method includes constructing a packet over synchronous optical network (POS) data stream; constructing an asynchronous transfer mode (ATM) data stream; combining the POS data stream and the ATM data stream into a single channelized synchronous optical network (SONET) data stream; and transmitting the single SONET data stream. Claims 1, 3, 5, and 8 of BROMLEY et al. do not recite, for example, constructing an ATM data stream; and combining the POS data stream and the ATM data stream into a single channelized SONET data stream.

Instead, claim 1 of BROMLEY et al. recites an input port for receiving the data, the data being formatted as SONET frames that contain data encapsulated in one of multiple formats within the SONET frames, and decapsulation logic configured to delineate the multiple formats to identify particular ones of the multiple formats and configured to decapsulate the delineated data in the multiple formats into a packet format used in the forwarding node, the decapsulation logic performing the delineation and decapsulation without executing processor instructions (col. 16, lines 19-30). Claim 3 of BROMLEY et al. recites that the decapsulation logic includes a delineator for delineating Asynchronous Transfer Mode (ATM) cells in the data (col. 16, lines 35-37). Claim 5 of BROMLEY et al. recites that the decapsulation logic extracts Internet Protocol (IP) packets from the data. Claim 8 of BROMLEY et al. recites that the decapsulation

logic includes a Point to Point Protocol (PPP) deframer for deframing PPP frames.

Appellants submit that claims 1, 3, 5, and 8 of BROMLEY et al. do not recite combining the POS data stream and the ATM data stream into a single channelized SONET data stream, as recited in claim 65 of the present application. Appellants also submit that VOGEL and SCHMIDT et al. do not explain why the input port, the decapsulation logic, or the programmable pattern storage, recited in claim 1 of BROMLEY et al., would be transformed to combine the POS data stream and the ATM data stream into a single channelized SONET data stream into the multiplexer, as recited in claim 65. The Examiner does not provide a *prima facie* basis for establishing the double patenting rejection of claim 65.

For at least the foregoing reasons, Appellants submit that the rejection of claim 65 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., VOGEL, and SCHMIDT et al. is improper. Accordingly, Appellants request that the rejection be reversed.

Claims 66-69 depend from claim 65. Therefore, Appellants submit that the rejection of claims 66-69 under the ground of non-statutory obviousness-type double patenting based on BROMLEY et al., VOGEL, and SCHMIDT et al. is improper for at least the reasons given above with respect to claim 65. Accordingly, Appellants request that the rejection be reversed.

VIII. CONCLUSION

In view of the foregoing arguments, Appellants respectfully solicit the Honorable Board to reverse the Examiner's rejections of claims 46-69.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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IX. CLAIM APPENDIX

1-45. (canceled)

46. A device comprising:

a demultiplexer configured to receive a channelized synchronous optical network (SONET) data stream and separate the channelized SONET data stream into constituent tributary data streams, the tributary data streams simultaneously including:

a packet over SONET (POS) tributary data stream, and

an asynchronous transfer mode (ATM) tributary data stream; and

a line card coupled to the demultiplexer and configured to provide the demultiplexer with the channelized SONET data stream.

47. The device of claim 46, wherein the channelized SONET data stream is received over a single optical fiber.

48. The device of claim 46, wherein the tributary data streams additionally include a Point to Point Protocol (PPP) over a DS tributary data stream.

49. The device of claim 46, wherein the channelized SONET data stream has an optical carry (OC) rate in accordance with the SONET standard.

50. The device of claim 46, wherein the POS tributary data stream has an optical

carry rate in accordance with the SONET standard.

51. The device of claim 46, wherein the ATM tributary data stream has an optical carry rate in accordance with the SONET standard.

52. The device of claim 46, wherein the tributary data streams additionally include:
a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream.

53. One or more devices in a data processing environment comprising:
a multiplexer configured to simultaneously receive tributary data streams including:
a packet over synchronous optical network (POS) tributary data stream,
and
an asynchronous transfer mode (ATM) tributary data stream,
the multiplexer being further configured to combine the simultaneously received tributary data streams into a single channelized synchronous optical network (SONET) data stream; and
a line card coupled to the multiplexer and configured to receive the single channelized SONET data stream.

54. The one or more devices of claim 53, wherein the simultaneously received

tributary data streams additionally include a Point to Point Protocol (PPP) over a DS tributary data stream.

55. The one or more devices of claim 53, wherein the channelized SONET data stream has an optical carry (OC) rate in accordance with the SONET standard.

56. The one or more devices of claim 53, wherein the POS tributary data stream has an optical carry rate in accordance with the SONET standard.

57. The one or more devices of claim 53, wherein the ATM tributary data stream has an optical carry rate of in accordance with the SONET standard.

58. The one or more devices of claim 53, wherein the simultaneously received tributary data streams additionally include:

a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream.

59. A forwarding node for directing data in a network, the forwarding node including:

means for creating at least two simultaneous tributary synchronous optical network (SONET) data streams, the at least two simultaneous tributary SONET data streams including:

a packet over synchronous optical network (POS) tributary data stream,

and

an asynchronous transfer mode (ATM) tributary data stream; and
means for transmitting the at least two simultaneous tributary SONET data
streams as a single SONET data stream.

60. The forwarding node of claim 59, wherein the at least two simultaneous tributary data streams additionally include a Point to Point Protocol (PPP) over a DS tributary data stream.

61. The forwarding node of claim 59, wherein the single SONET data stream has an optical carry (OC) rate in accordance with the SONET standard.

62. The forwarding node of claim 59, wherein the POS tributary data stream has an optical carry rate in accordance with the SONET standard.

63. The forwarding node of claim 59, wherein the ATM tributary data stream has an optical carry rate in accordance with the SONET standard.

64. The forwarding node of claim 59, wherein the at least two simultaneous tributary data streams additionally include:

a composite tributary data stream that includes a POS tributary data stream and an ATM tributary data stream.

65. A method for transmitting information over a fiber optic cable, the method comprising:
- constructing a packet over synchronous optical network (POS) data stream;
 - constructing an asynchronous transfer mode (ATM) data stream;
 - combining the POS data stream and the ATM data stream into a single channelized synchronous optical network (SONET) data stream; and
 - transmitting the single SONET data stream.
66. The method of claim 65, wherein the single SONET data stream is transmitted over a single fiber optic cable.
67. The device of claim 65, wherein the channelized SONET data stream has an optical carry (OC) rate in accordance with the SONET standard.
68. The device of claim 65, wherein the POS tributary data stream has an optical carry rate in accordance with the SONET standard.
69. The device of claim 65, wherein the ATM tributary data stream has an optical carry rate in accordance with the SONET standard.

X. EVIDENCE APPENDIX

None

XI. RELATED PROCEEDINGS APPENDIX

None